

DOCUMENT RESUME

ED 204 676

CG 015 294

AUTHOR Schwarzer, Ralf; Schwarzer, Christine
TITLE Achievement Anxiety with Respect to Reference Groups in School.
SPONS AGENCY Ministry of Science and Research, Northrhine-Westphalia (West Germany).
PUB DATE Apr 81
NOTE 17p.; Paper presented at the Annual Meeting of the American Educational Research Association (65th, Los Angeles, CA, April 13-17, 1981).
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Achievement; *Anxiety; Comparative Analysis; *Educational Environment; Elementary Secondary Education; Foreign Countries; *Group Dynamics; *Peer Influence; Psychological Patterns; Role Perception; *Self Concept; Self Evaluation (Individuals)
IDENTIFIERS *West Germany

ABSTRACT

Students have different reference groups at their disposal in the school environment; however, the class to which they are assigned is the dominant social context for daily experiences. Thus, evaluations by teachers and peers which are concerned with achievement distribution occur in this limited reference group. In an investigation of the relationship between achievement anxiety and social context, a questionnaire containing an achievement anxiety scale was administered to 1479 students in grades 5 and 8 in the 3 types of West German schools (Hauptschule, Realschule, and Gymnasium). Analysis of the data revealed that, in each type of school and at each grade level, the high achievers had the lowest anxiety scores and the low achievers had the highest anxiety scores. Findings provided evidence for the occurrence of reference group effects in the school environment. Results obtained from comparing two extreme achievement levels in two schools supported the assumptions of relative deprivation and relative gratification concerning the well-being of students. (NRB)

* Reproductions supplied by EDRS are the best that can be made
* from the original document.

ED204676

ACHIEVEMENT ANXIETY WITH RESPECT TO REFERENCE
GROUPS IN SCHOOL

Ralf Schwarzer
Christine Schwarzer

University of AACHEN
AACHEN, West Germany

CG 015294

Paper presented at the Annual Convention of the American Educational
Research Association, Los Angeles, CA, April 1981.

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Ralf Schwarzer

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

Achievement Anxiety with Respect
to Reference Groups in School*

1. Subjective well-being of students

We are concerned about the well-being of our students in school from a humanistic viewpoint as well as from an achievement improvement viewpoint. Belief in one's own competence, hope for success and a level of anxiety as low as possible are prerequisites for a productive learning process. But we know that there are individual differences in well-being dependent on certain characteristics of the environment (Moos 1979). The most important environmental source of well-being in school is the social context. On the one hand the social network can provide support, on the other hand it delivers information about the achievement distribution that can have a debilitating effect on the students. Well-being seems to be especially a result from self-evaluation with respect to a criterion that is predominant in a given situational context. In school the main criterion is achievement as it is in our society on the whole. The perceived achievement distribution is therefore the means that allows self-evaluation of the students. In other words cognitive processes take place which are directed to one's own achievement level on the basis of a socially mediated achievement distribution. These cognitions are called social comparison processes and are highly problematic (Festinger 1954, Suls/Miller 1977). Cognitions are necessary and sufficient antecedents of emotions (Lazarus 1980, Weiner 1980). The subjective well-being as an emotional state has certain cognitive prerequisites. Social comparison processes lead to a self-evaluation that can result in positive or

* This investigation was supported in part by the Ministry of Science and Research in Northrhine-Westphalia (West Germany)

+ Paper presented at the AERA Annual Convention in Los Angeles, April 1981

negative emotional states like pride or achievement anxiety. It is taken into consideration that information about oneself needs not focus upon social comparisons but can also focus upon temporal comparisons (Albert 1977) which uses information about the individual behavior across different occasions or time periods. A third reference norm is concerned with absolute standards of achievement as can be found in criterion-referenced testing. It is very unclear until now to what degree individual differences in preferring one of these reference norms exist (Rheinberg 1980). But it is rather clear that social comparison processes are predominant in achievement-related social environments like schools. Our point is that variables of well-being are highly dependent on the choice of reference groups which are available in the perceived environment. For a student there are different reference groups at his disposal in the school environment. He can compare himself with others in his class, across some classes with all members of the school or across schools with his whole age-group etc. There are many possibilities to select a certain number of similar individuals in order to establish a reference group for one's self-evaluation. But the freedom of choice is limited by the reality which confronts the student every day. He has to survive in that class to which he was assigned for a long-term period. This is the dominant social context for his daily experiences (Rogers et al. 1978).

Evaluations by teachers and peers take place which are concerned with the achievement distribution in this limited reference group. In consequence self-evaluations will be dependent on the same context. Of course there will be also other comparison processes with other reference norms or other reference groups. These processes will take place in a reflective mood when the student worries about his achievement level and about his social significance. There seems to be a rank order in the occurrence of comparison processes which has social comparisons within classes on

the top followed by other comparisons in dependence of individual differences between the students.

The social limitation of these cognitions has consequences for the distribution of well-being in the school environment. We predict a high degree of subjective well-being in those students who are in the upper part of a reference group and vice versa. The selection of and assignment to reference groups determines therefore the well-being in future. From the researcher's standpoint there are many groups with different levels of achievement and prestige. The distribution of well-being is not equivalent to the distribution of achievement or prestige. Instead one can find more variation within the groups than between the groups. If we compare a high achievement class with a low achievement class we will find an overlap of the two distributions of well-being. So it is understandable that students of low ability in good classes feel worse than students with high ability in bad classes, even when there is a great difference in achievement. Students with high achievement in poor classes feel like "big fishes in a small pond" and students with low achievement in good classes feel like "small fishes in a big pond" (Davis 1966). The former effect is called "relative gratification" and the latter is called "relative deprivation" (Pettigrew 1967, Martin 1980). These two effects are the main subject of reference group theory. There is some empirical evidence for this theory but it is not sufficient until today to explain differences in well-being. Especially the chain of cognitive events including the perception of an achievement distribution and the self-evaluation by social comparison processes is not proved. Our following investigation is not able to do this but it can give further support to the theory by applying it to the structural characteristics of the German school system.

The intention of our study is to relate achievement anxiety to the social context. The reference group can be seen

as a threatful environment for those students who are ranked below the median of the achievement distribution. The well-being of these students will be debilitated as can be seen in different measures. Indication of well-being can be provided by variables like test anxiety, hope for success, loss of control, and self-esteem. These variables are affected by different circumstances in the perceived environment. If the cognitive appraisal results in clarity about the situation we expect high and low scores in self-esteem and loss of control. That means that the student has a fixed impression of his social rank by self-evaluating his achievement.

If on the other hand the cognitive appraisal results in ambiguity, that is a potentially threatful environment, we expect high scores in achievement anxiety and possibly hope for success. Anxiety and hope are both related to ambiguity in self-evaluation. While this is theoretically simple we have no empirical evidence concerning hope because there is no measure that allows us to assess hope separated from success confidence and achievement expectations. The present study focusses on anxiety as an important variable in reference group research.

In Germany there is a tripartite school structure on the secondary level. After primary school in the age of 10, parents and teachers have to decide what level of education shall be obtained in future. Three streams with respect to ability and previous achievement are provided: secondary school (Hauptschule), middle school (Realschule) and grammar school (Gymnasium). For the students this is a transition from an achievement-heterogeneous social context to an achievement-homogeneous social context. For some of them this means a dramatic change in social comparison processes. If they have been in the bottom of the former distribution they now find themselves together with other poor children from other schools in one class. Therefore the environment becomes less threatful.

If they have been on the top of the former distribution they now find themselves together with other bright children. Their new environment is characterized by more competition and ambiguity. In this way the school system provides reference groups and is partly responsible for the distribution of well-being. The predicted effects are only valid if, first, social comparison processes dominate over temporal and criterial comparison processes. Second, the social comparison processes must be limited to the range of the school level. This means that a student must not compare himself with other students who are in a different stream with a different achievement level, e.g. a student in the Hauptschule should compare himself with his peers and not with students in the Gymnasium. Third, the well-being must be dependent on achievement-related cognitions in the school environment. If, for example, success and failure in school do not contribute to the self-evaluation because there are other involvements with greater subjective significance we cannot expect an influence on well-being in school. Finally, self-evaluations are connected with self-awareness. So the focus of attention must shift to the self. This occurs usually when oneself is evaluated by others or when events occur which were not expected (Wicklund/Frey 1980). It is also necessary that there is a degree of uncertainty about oneself. If there were a strong assumption concerning one's own achievement level or social rank every contradictory information would be rejected and only confirming information would be stored (Vallacher 1980). The degree of uncertainty defines the "latitude of acceptance". Self-referent thoughts are necessary to establish expectancies of self-efficacy which are developed with respect to different sources of information, especially provided by social comparison processes (Bandura 1980). If these prerequisites are given, reference group effects are predicted.

2. Empirical findings

Our study cannot prove the occurrence of the chain of cog-

nitive events because it is a one-shot investigation with a large sample. A questionnaire containing an achievement anxiety scale was given to 1479 students in grades 5 and 8 of the three types of school. The question to be answered was if grade level and school type would interact. We expect differences in the anxiety means between school types in 5th grade but not in 8th grade. The assessment took place directly when the school year began so that the fifth graders could not have had experience in their new school environment. Their well-being and their self-evaluations should still be based on the heterogeneous primary school environment.

Table 1: Two-way analysis of variance

Source	SS	DF	MS	F	p	ETA ²
type of school	387.62	1	387.62	21.84	<.01	.02
grade level	207.13	1	207.13	11.67	<.01	.01
interaction	1236.08	1	1236.08	69.64	<.01	.065
residual	17306.62	575	17.75			
total	19137.45	978				

The first analysis of the data* focusses on the two extreme school tracks, Hauptschule and Gymnasium. There are significant differences in anxiety between these two tracks as well as between the two grade levels (cf. table 1). But most important is the interaction which explains 6.5% of the criterion variance. The anxiety difference between the two tracks is in grade 5 in the opposite direction compared to grade 8. This is a disordinal interaction as is shown by a posteriori comparisons (table 2). The results are depicted in figure 1.

* All results are based on SPSS procedures at the computer center of the RWTH Aachen

Table 2: A posteriori comparisons

Cell	Mean	SD	N	t	P	ω^2
Grade 5, Hauptschule	8.93	4.13	262	9.03	<.01	.125
Grade 5, Gymnasium	5.71	4.32	301			
Grade 8, Hauptschule	7.34	4.34	182	-3.23	<.01	.002
Grade 8, Gymnasium	8.69	4.07	234			

In grade 5, after the transition, anxiety is distributed in analogy to the achievement as usual in the primary school (Schwarzer 1975, 1979). Students in the Hauptschule display the highest scores whereas students in the Gymnasium display the lowest scores in achievement anxiety. Those who are in grade 8 have had already 3 years of experience within their school. Since social comparison processes are usually limited they do not compare with their heterogeneous age group but with their peers in the rather homogeneous social context. There should be no differences in anxiety means between the schools. But the relationship has even turned around. Now students in the Gymnasium display higher scores than those in the Hauptschule. This might be caused by additional factors like achievement pressure which is induced by parents and/or teachers. Another explanation lies in the awareness of the development of one's own relative achievement. Those who have been on top of the distribution in primary school and went down during the time they attended the Gymnasium might perceive their environment as threatening which results in more anxiety. This will be clear after our longitudinal study is completed in some years.

It seems to be necessary to take another factor into consideration. Until now we have observed only the variation between the schools, not within the schools. The question

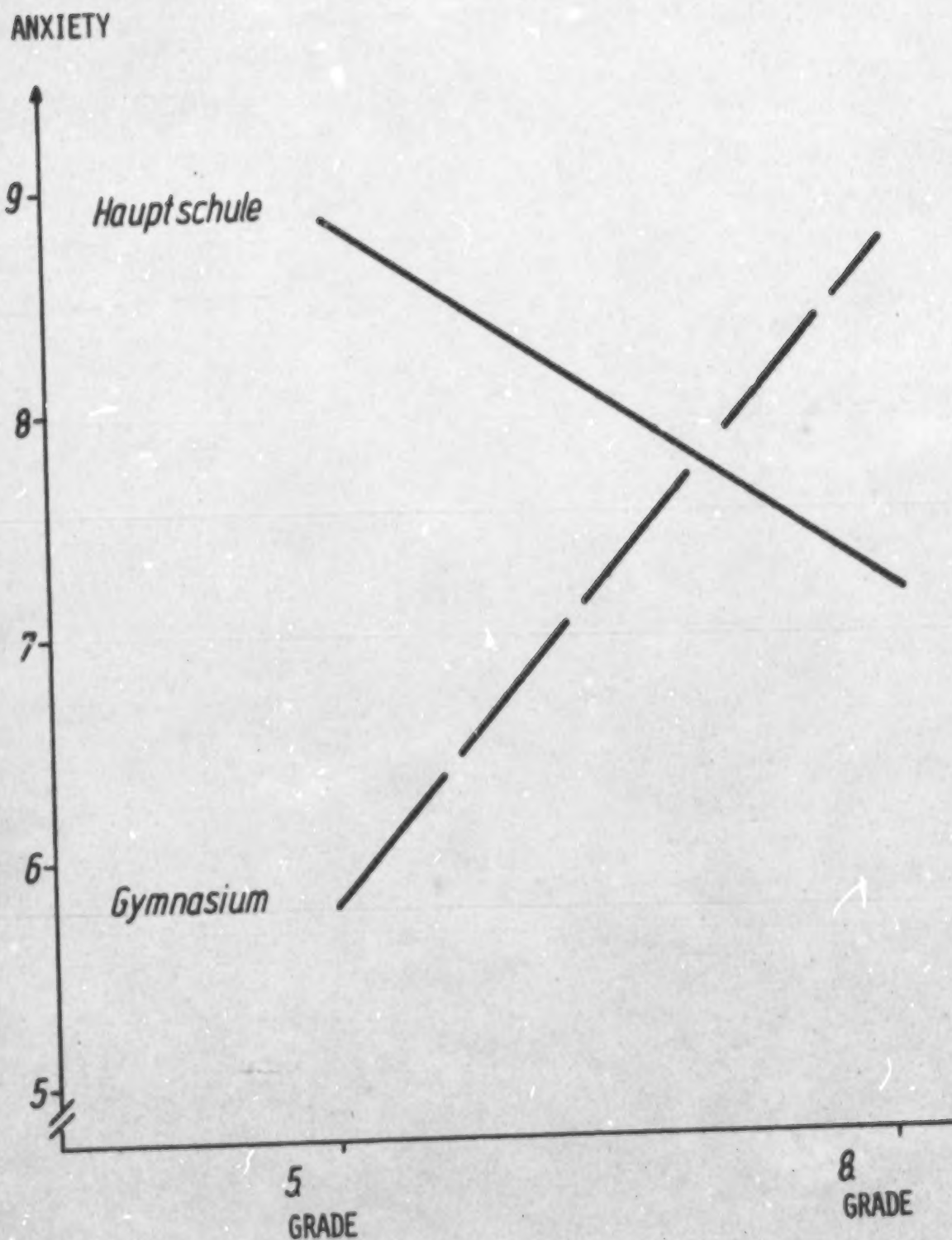


FIGURE 1: INTERACTION OF GRADE LEVEL AND SCHOOL TRACK ON ANXIETY

is whether the achievement variation within the schools is responsible for a large amount of anxiety variation or not. A three dimensional analysis of variance was conducted with grade level, type of school and achievement level as factors, anxiety as criterion. The marks in math serve as indicators for achievement.

All three school tracks are used in order to have a complete analysis of the data. The interaction between grade level and type of school remains significant as well as the three main effects (cf. table 3). Therefore this second analysis does not provide us with additional information about our research hypotheses but it delivers a complete picture of the complex relationships between the included variables.

Table 3: Three-way analysis of variance

Source	SS	DF	MS	F	p	ETA ²
Type of school	325.34	2	162.67	9.40	<.01	.01
Grade level	198.21	1	198.21	11.45	<.01	.01
Achievement level	955.30	2	477.65	27.59	<.01	.04
Type of school X grade level	915.85	2	457.93	26.45	<.01	.04
Type of schools X achievement	63.67	4	15.92	.92	>.05	
Grade X achievement	10.68	2	5.34	.31	>.05	
Type X grade X achievement	91.73	4	22.93	1.32	>.05	
Residual	22055.44	1274	17.31			
Total	24616.22	1291	19.07			

The results are depicted in Figure 2. As can be seen there is a variation of anxiety within the schools in dependence of the achievement variation. In each type of school and each grade level the high achievers have the lowest anxiety scores and the low achievers have the highest anxiety scores, as is usual. Important is that the results discussed in Figure 1 are not caused by special groups within each school but uniformly all achievement groups contribute to the interaction effect between grade level and type of school. If we compare the two extreme achievement levels in the two extreme schools, Hauptschule and Gymnasium, we get a clear picture of reference group effects. The low achievers within the Hauptschule reduce their amount of anxiety whereas the low achievers in the high prestige school increase it. The most anxious students of the transition point of time are the poor students who were just assigned to the Hauptschule. The most anxious students after three years of streaming are the low achievers in the Gymnasium. Their high degree of anxiety is not justified because they belong to a group with the best educational opportunities and with high prestige. Therefore this effect is called relative deprivation. Their well-being is the worst while others who are more deprived feel better. The high achievers in the Gymnasium also increase their anxiety. In grade 5 this is the group with the highest degree of well-being. These are children who have been the brightest in primary school and were assigned to attend the Gymnasium. Three years later the level of anxiety in the group of high achievers is strongly increased. The group of high achievers in the Hauptschule goes in the opposite direction. These children have been rather poor in primary school and were assigned to attend this school with a low level of prestige. Within this school these students have the opportunity to conduct positive social comparison processes. They are the "big fishes in the small pond". In level 8 this group displays the highest degree of well-being. This effect is called relative gratification.

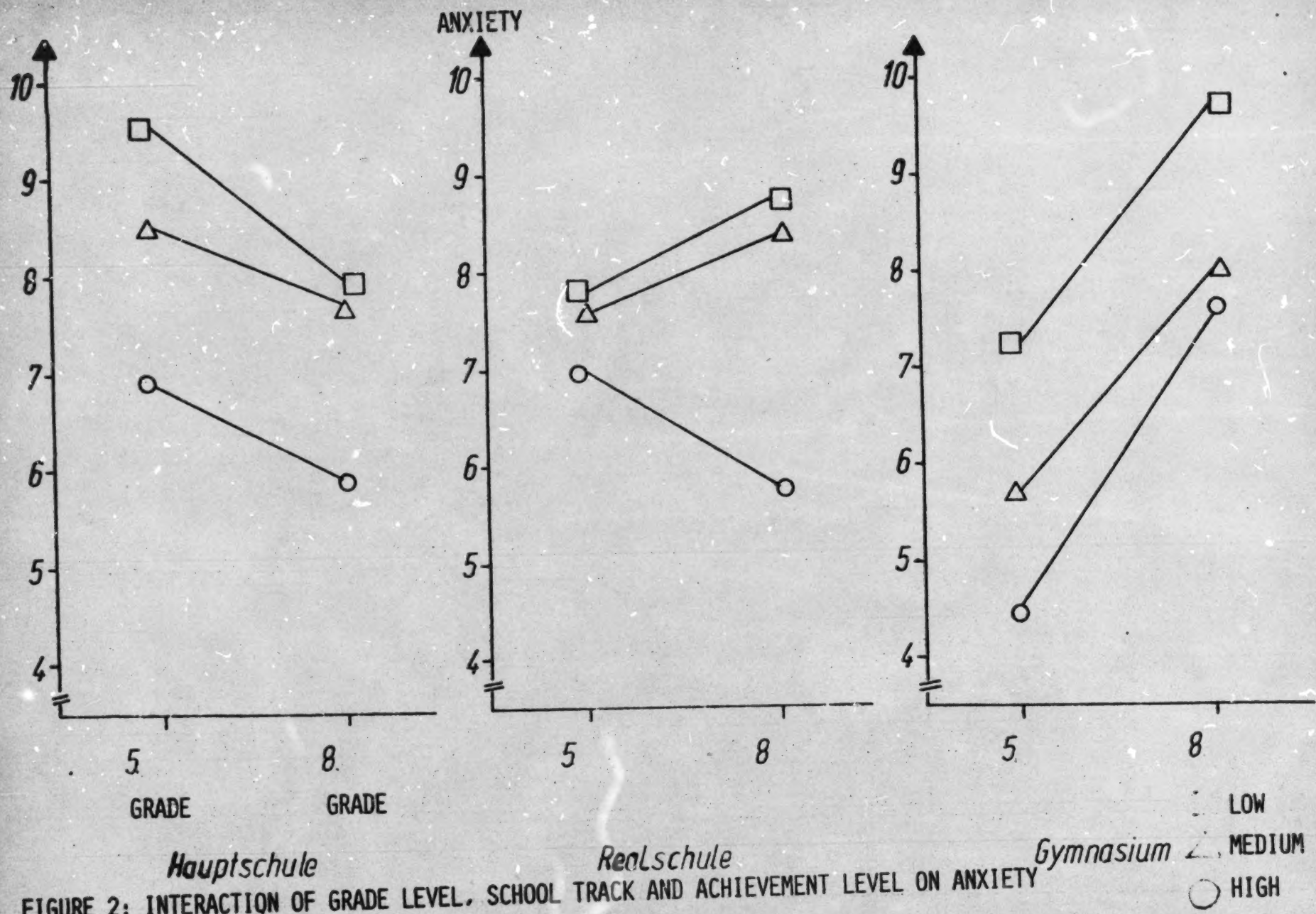


FIGURE 2: INTERACTION OF GRADE LEVEL, SCHOOL TRACK AND ACHIEVEMENT LEVEL ON ANXIETY

This study has given empirical evidence for the occurrence of reference group effects in the school environment. The results support the assumption of relative deprivation and relative gratification concerning the well-being of students. Besides the dependent variable "achievement anxiety" we also used other measures like hope for success, loss of control and self-esteem. The results were similar. But still two problems have to be taken into consideration: First, this is a display of cross-sectional data whereas the longitudinal data will not be available before 1982. Therefore, we must be very careful in interpreting the developmental aspect of reference group effects. There will be a fluctuation in the achievement which has in consequence that those students who establish a group of well-performers in grade 5 will be in different achievement groups in grade 8. Second, reference group theory demands the analysis of cognitive processes. That is, we have to prove that well-being is dependent on self-evaluation and that self-evaluation is conducted by social comparisons. Further we have to prove that these social comparisons are limited to a set of peers who exist in the social context of every day life. Therefore we have in the future to combine field studies in institutions with experimental small group designs.

References

- Albert, S.: Temporal Comparison Theory.
Psychological Review 84 (1977) 485-503
- Bandura, A.: Self-Referent Thought: The Development of
Self-Efficacy. In: J.H. Flavell & L.D. Ross (Eds.):
Development of Social Cognition. 1980 (in press)
- Davis, J.A.: The Campus as a Frog Pond: An application
of the Theory of Relative Deprivation to Career
Decisions of College Men. The American Journal of
Sociology 72 (1966) 17-31
- Festinger, L.: A theory of social comparison processes.
Human Relations 7 (1954) 117-140
- Lazarus, R.S.: The stress and coping paradigm. In:
C. Eisdorfer, D. Cohen, A. Kleinman and P. Maxim
(Eds.): Theoretical bases for psychopathology.
New York: Spectrum 1980
- Mertin, J.: Relative Deprivation: A Theory of Distributive
Injustice for an Era of Shrinking Resources. In:
Research in Organizational Behavior. Vol. 3.
Greenwich, Conn.: JAI Press 1980
- Moos, R.: Evaluating Educational Environments.
San Francisco: Jossey-Bass 1979
- Pettigrew, T.F.: Social evaluation theory.
In: D. Levine (Ed.): Nebraska Symposium on Motivation.
Lincoln 1967, 241-311
- Rheinberg, F.: Leistungsbewertung und Lernmotivation.
Göttingen: Hogrefe 1980
- Rogers, C.M., Smith, M.D., Coleman, J.M.: Social Comparison
in the Classroom: The Relationship between Academic
Achievement and Self-concept. Journal of Educational
Psychology 70 (1978) 50-57
- Schwarzer, R.: Schulangst und Lernerfolg. Zur Diagnose
und zur Bedeutung von Leistungsangst in der Schule.
Düsseldorf: Schwann 1975, 1980²
- Schwarzer, R.: Bezugsgruppeneffekte in schulischen Umwel-
ten. Zeitschrift für empirische Pädagogik 3 (1979)
153-166
- Suls, J.M., Miller, R.L. (Eds.): Social Comparison Processes.
New York: Wiley 1977

- Vallacher, R.R.: An introduction to self theory.
In: D.M. Wegner & R.R. Vallacher (Eds.):
The Self in Social Psychology.
New York: Oxford Univ. Press 1980, 3-30
- Weiner, B.: Human Motivation.
New York: Holt, Rinehart and Winston 1980
- Wicklund, R.A., Frey, D.: Self-awareness theory:
When the self makes a difference.
In: D.M. Wegner & R.R. Vallacher (Eds.):
The Self in Social Psychology.
New York: Oxford Univ. Press 1980, 31-54
- Schwarzer, R.: Worry and emotionality as separate components
in test anxiety. Paper presented at WPA meeting.
Los Angeles 1981
- Schwarzer, R.: Self-concept maintenance in achieve-
ment situations. Paper presented at the WPA
meeting in Los Angeles, April 1981
- Schwarzer, R. & Schwarzer, C.: Psychosocial effects
of desegregation in Germany. Paper presented at
the AERA Annual Convention in Los Angeles, April
1981
- Schwarzer, R.: Diagnosis and Prediction of Learning
success. Studies in Educational Evaluation 6
(1980) 195-207
- Schwarzer, R.: Stress and social support. Unpublished
paper. Aachen 1980
- Schwarzer, R.: The assessment of state-anger and trait-
anger. Paper submitted to the Annual APA Convention
in Los Angeles, August 1981

Address:

Prof. Dr. Ralf Schwarzer
Paedagogische Fakultät
University of Aachen RWTH
Ahornstrasse 55
D - 5100 Aachen, West Germany

Dr. Christine Schwarzer
University of Cologne
West Germany